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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | | ATTORNEY DOCKET NO. |
|---|---|---|---|---|
| 09/505,516 | 02/17/00 | KARABEYOGLU | M | A-67587-1/AJ |

PM82/0308

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| EXAMINER | |
|---|---|
| MILLER, E | |
| **ART UNIT** | **PAPER NUMBER** |
| 3641 | 9 |

**DATE MAILED:** 03/08/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trad marks**

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/505,516 | KARABEYOGLU ET AL. | |
| | Examiner | Art Unit | |
| | Edward A. Miller | 3641 | |

*-- The MAILING DATE of this communication app ars on the cover sh et with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *29 January 2001* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *14-21 and 48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14-21 and 48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

**Attachment(s)**

15) ☐ Notice of References Cited (PTO-892)
16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
18) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other: .

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 14-21 and 48 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims, as understood, merely require a mental calculation and a mental step of selecting. This is a thought process. This principle applies to a mathematical calculation or to a computer calculation. See MPEP 2106, in relevant part:

> The subject matter courts have found to be outside the four statutory categories of invention is limited to abstract ideas, laws of nature and natural phenomena. While this is easily stated, determining whether an applicant is seeking to patent an abstract idea, a law of nature or a natural phenomenon has proven to be challenging. These three exclusions recognize that subject matter that is not a practical application or use of an idea, a law of nature or a natural phenomenon is not patentable. See, e.g., *Rubber-Tip Pencil Co. v. Howard*, 87 U.S. (20 Wall.) 498, 507 (1874) ("idea of itself is not patentable, but a new device by which it may be made practically useful is"); *Mackay Radio & Telegraph Co. v. Radio Corp. of America*, 306 U.S. 86, 94, 40 USPQ 199, 202 (1939) ("While a scientific truth, or the mathematical expression of it, is not patentable invention, a novel and useful structure created with the aid of knowledge of scientific truth may be."); *Warmerdam*,33 F.3d at 1360, 31 USPQ2d at 1759 ("steps of locating' a medial axis, and `creating' a bubble hierarchy . . . describe nothing more than the manipulation of basic mathematical constructs, the paradigmatic abstract idea' ").

3. Claims 14-21 and 48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are so indefinite that they cannot be understood. Nowhere is there antecedent basis that would correlate the properties of the propellant that are determined in calculating the equations in claim 14, with the propellant composition itself. The claims all appear theoretical. The amendment to claim 14 appears improper, e.g., indefinite, as one formula was taken out and another, different one was inserted therefore. Also, claim 14 now has two steps of "selecting", which is double recitation in line 3 and the third from last line, with unrelated or indefinitely related calculations to select. Is the same propellant or not selected in the two selecting steps? The actual

gas velocity depends on the composition of the propellant burned, the shape and size of the combustion chamber, the conditions therein including the pressures and temperatures obtained therein, the burning rate exponent of the propellant, etc. There is no basis in the claims relating to any of these things. The formulae set forth cannot be understood as to what is required. In claim 20, as stated, to further limit the propellant, it appears that "fuel" and "oxidant" are the only possibilities for the propellant in overall character. If this is intended to recite only one of two possibilities for a hybrid, none of these limitations are stated, only implied, which is improper. Even if so, to state all possibilities is not to further limit the claim from which claim 20 depends. Claim 48 is indefinite as an improper use claim, without a method step. "A particular application or mission" in claim 48 also states nothing; no correlation is recited for what parameters are required for any such "application or mission." Claim 48 provides for the use of the method, but, since the claim does not set forth any steps involved in the method or process, it is unclear what method applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced. These remain exemplary.

4. Claim 48 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966). See MPEP 2173.05(q).

5. Claims 14-21 and 48 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. Certain basis or parameters or calculation steps, etc., set forth by reference to publications in the specification, appear critical or essential to the practice of the

claimed invention. To the extent that this matter is essential, incorporation by reference to non-patent literature is not allowed. See MPEP 608.01(p).

6. Claims 14-21 and 48 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In claim 14-15 specifically, and the rest by dependence, the insertion of values in the last line is new matter. The expression lacks the parentheses for the denominator found in the specification at page 33, line 10. Also, it does not appear that the variables of the propellants, the rocket or engine parameters, etc., necessary to carry out the calculations required in the claims, are adequately disclosed in the specification. These latter matters are critical or essential to the practice of the invention, but are not included in the claim(s) and are not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Further, if a computer is necessary to solve the computations, the specification does not set forth any computer details, or programs, which are necessary to practice the invention. These are exemplary.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning either this or an earlier communication from the Examiner should be directed to Examiner Edward A. Miller at (703) 306-4163. Examiner Miller may normally be reached daily, except alternate Fridays, from about 9 AM to 7 PM.

If attempts to reach Examiner Miller by telephone are unsuccessful, his supervisor Mr. Jordan can be reached at (703) 306-4159. The Group fax number is (703) 305-7687.

If there is no answer, or for any inquiry of a general nature or relating to the application status, please call the Group receptionist at (703) 308-1113.

Miller/em
March 7, 2001

EDWARD A. MILLER
PRIMARY EXAMINER